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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,440	03/09/2004	Bruce Richard Crain	NORT 64197	1812

7590 01/23/2006

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EXAMINER

CAO, HUEDUNG X

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/796,440

Applicant(s)

CRAIN ET AL.

Examiner

Huedung X. Cao

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Tan Ho  
TAN HO  
PRIMARY EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over ALT et al. (US 6,198,445 B1) in view of SANZ et al. (US 2004/0262453 A1).

As per claim 1, Alt teaches the claimed "a conformal load-bearing antenna assembly" comprising:

a pan shaped to fit within an aircraft window opening (Alt, column 2, lines 14-26).

It is noted that Alt does not disclose a pan providing structural rigidity as claimed.

However, Sanz teaches that such pan providing structural rigidity is widely used in the art (Sanz, paragraph [0021]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Alt's antenna system with a pan providing structural rigidity, as taught by Sanz in order to have a good antenna structure.

an antenna element disposed within the pan (Alt, figure 1, radiating element 14; column 3, line 62-column 4, line 24);

a connection for coupling a signal to the antenna element (Alt, column 4, lines 2-24);

Claim 2 adds into claim 1, wherein the antenna element comprises a stripline supported by dielectric sheet, and at least one radiating element couple to stripline (Alt, column 3, lines 41-60, column 4, lines 34-58);

Claim 3 adds into claim 2, wherein the antenna element further comprises a front ground plane and a back ground plane, with the front ground forming with one or more slots adjacent to the radiating element (Alt, column 3, lines 41-60);

Claim 4 adds into claim 1, further comprising a conductive gasket positioned adjacent to the perimeter of the antenna element, electrically bonding the antenna to an aircraft fuselage and providing a pressure seal (Alt, column 4, line 59-column 5, line 37);

Claim 5 adds into claim 1, wherein the pan forms a pressure seal with the aircraft window opening (Alt, column 6, lines 5-34).

Claim 6 adds into claim 1, comprising a bonding strap for carrying lightning currents from the antenna structure to a fuselage of the aircraft (Alt, column 6, lines 5-53).

Claim 7 adds into claim 3, wherein the front ground plane and the back ground plane are electrically bonded to each other (Alt, figure 1, column 3, lines 41-60).

Claim 8 adds into claim 3, wherein the back ground plane is electrically bonded to the pan (Alt, figure 1, column 5, line 57-column 6, lines 4).

Claim 9 adds into claim 1, wherein the antenna element comprised a tapered stripline (Alt, figure 1, strip line 30).

***Inquiries***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Cao  
Patent Examiner

  
TAN HO  
PRIMARY EXAMINER